striate-ribbed body greenish to straw-color, the thinner nerveless margin red-brown: anthers linear, 1.5 mm. long: achenes narrowly oblong, trigonous, attenuate below, abruptly short-beaked above, 3–4 mm. long: bristles tawny to copper color.—Sp. 52 (1753); Michx., Fl. i. 34 (1803); Pursh, Fl. i. 58 (1814); Ell. Sk. i. 92, t. 4, fig. 1 (1821)— uncharacteristic; Big., Fl. Bost. ed. 2, 24 (1824); Torr., Fl. 66 (1824), Ann. Lyc. Nat. Hist, N. Y. iii. 338 (1836), and Fl. N. Y. ii. 358 (1843); Gray, Man. 529 (1848); Britton & Brown, Ill. Fl. i. 273, fig. 643 (1896); Small, Fl. 175 (1903). *Eriophoropsis virginica*, Palla, Bot. Zeit. liv. ab. 1, 150, 151 (1896).— Bogs and meadows, Newfoundland to Ontario and Michigan, south to Georgia. Fruiting, July to September.

Var. ALBUM, Gray. Bristles whitish.— Man. ed. 5, 566 (1867); Britton & Brown, l. c.— A scarcely noteworthy extreme, Quebec and Ontario to Connecticut and New York.

(*To be continued.*)

PLANTS OF ONEIDA COUNTY, NEW YORK, AND VICINITY,—I.

J. V. HABERER, M. D.

IN the latter part of July, 1904, the writer, in company with Mr. L. M. McCormick of New York, spent several days botanizing in the town of Forestport, which forms the northeastern corner of Oneida County. A number of rare and interesting plants were found including one recently described in RHODORA, therefore, the accompanying notes may be of interest to its readers.

The region visited is on the southwestern border of the great Adirondack wilderness, about forty miles north of Utica, and includes White, Otter, Round and Long Lakes, Deer Pond, mountainous woods, extensive beaver meadows or marl marshes, and sandy fields, all within a radius of three miles. A ridge of Archaean rock, extending from the northeast to the southwest, divides the region into two nearly equal portions. On the southeastern slope is White Lake, perfectly clear and transparent, and on the northwestern, the other

lakes, with the dark color characteristic of Adirondack waters. To the north and east, there is an unbounded stretch of mountains and woods, and to the south and west, a country that is, for the most part, much lower, flat, barren and sandy. The streams are rapid, and although flowing to the south, the drainage is into Lake Ontario through the Black River, the elevation of which at the ingress of these streams is about 1100 feet.

White Lake, the central point of observation, lies at an altitude of about 1450 feet above the sea level, and is in latitude 43° 32′ N., and longitude 75° 13′ W. of Greenwich. It is an intermediate station on the main artery of travel, that leads to the famous "North Woods" and John Brown Tract.

The flora of this portion of the county is similar to that of the adjacent Adirondacks,[1] in some respects it bears relationship to that of the Mohawk Valley,[2] and combines features common to both regions.

Forty years ago when Paine's Catalogue of the Plants of Oneida County and Vicinity[3] was published, the region in question was little known and almost inaccessible; therefore, the following list of plants with notes, includes only those (with few exceptions), that are additions to or admit of comparison with the record in that comprehensive work.

The asterisk (*) indicates plants not included in the Catalogue; the dagger (†) those included in that work, but with no definite record of their having been found in the county.

Specimens of many of the plants have been contributed to the Gray Herbarium at Harvard University, and the State Herbarium at Albany. Acknowledgments are due to Dr. B. L. Robinson, Mr. M. L. Fernald and Prof. C. H. Peck for assistance in the determination of doubtful plants. A number of plants are as yet undetermined, and a report of these and many others from different portions of Central New York must be deferred to subsequent issues of this Journal.

* DROSERA ROTUNDIFOLIA, var. COMOSA Fernald, RHODORA, vii. 8. One of the first plants to attract our attention was a dwarf form of

[1] The altitude of Jock's (Honnedaga) Lake, the highest in the woods, is 2187 feet.

[2] The average elevation of Utica is 500 feet, and of the Mohawk river bank at this point 410 feet.

[3] 18th Rep. N. Y. Mus. Nat. Hist. 53–192. 1865.

sundew, with rounded leaves and "subcapitate inflorescences of few flowers." It was quite abundant in the marl marshes, and on the boggy margins of the lakes, alone, or in company with *Drosera rotundifolia* L., †*Juncus alpinus* Vill., and other plants; also on treacherous sloughs bordering Deer Pond, with, but outnumbered by † *Drosera intermedia* Hayne. Specimens were sent to the Gray Herbarium and Mr. Fernald very kindly identified them as being "exactly" the plant which he had "in print for the forthcoming January RHODORA." On consulting my herbarium I found that I had previously, July 11, 1902, collected immature specimens of this curious plant, on the marl margins of a Deer Pond (altitude 1950 ft.), near North Lake, Wilmurt, Herkimer County. The companion plants were *Drosera intermedia* Hayne, *Xyris montana* Ries, and the rare *Juncus stygius*, var. *Americanus* Bucheńau! This evasive rush known in Somerset County, Maine, and mentioned by Mr. Fernald (RHODORA, vi. 41 and vii. 8), as growing in the Gaspé County bog, has a precarious existence in the State of New York. Perch Lake, Jefferson County, the station recorded in Paine's Catalog, 145, and the only one known for years, was destroyed long ago. The plant, however, was rediscovered in the State by Professor C. H. Peck, "on the marshy borders of a lake" in the Adirondacks (27 Rep. N. Y. Mus. Nat. Hist. 113). Dr. Peck very discreetly withheld the exact locality. He has lately informed the writer that it was in Essex County. Therefore, I am doubly fortunate in recording this plant in Herkimer County, and in the discovery of the unique sundew in a region far removed from the type locality.

* XYRIS MONTANA Ries. There was a luxuriant growth of this species on the borders of White Lake and along its outlet, at Round Lake, Deer Pond, and in the beaver meadows. In a peat bog immense patches were in full bloom July 23. The sight was a beautiful one, worth going miles to see, and was ample recompense for the inconvenience of a sudden downpour of rain. Amongst the myriads of plants, an occasional one was found in which the lowest scale of the flowering head was transformed into a bract 5–15 mm. long. It may be designated as forma **bracteosa**.

* XYRIS CAROLINIANA Walt. Common on the sandy and gravelly shores of White Lake, barely in flower on the above date and not detected elsewhere. An intermediate form with the leaves of *X. montana* and the heads of *X. Caroliniana* was common at White Lake,

and in a beaver meadow near Round Lake, fully as far advanced in flowering as the former species. *X. montana* has been found by Mr. W. E. Wolcott and the writer, at several stations in the vicinity of North Lake. Previous records of these plants in northern New York are very meagre. Paine (l. c. 146) mentions but one (*X. bulbosa* Kunth), and specimens of his *X. montana* and *X. flexuosa* from Herkimer County, are cited by H. Ries, Bull. Torr. Cl. xix. 35. Probably both species were collected on the "muddy edges" of ponds, on Bald Mountain, a long, narrow, rocky ridge nearly destitute of trees, north of Third Lake, one of the Fulton chain of lakes, Webb, North Herkimer County (altitude 2200 ft.). Paine's locality is ten to fifteen miles north of any that I have reported. It is of interest to note that these plants also have their habitats in the Hudson Valley and on Long Island (see Ries, l. c. 37, 38, 40, and Peck, Rep. xxii, 103).

† ELATINE AMERICANA Arnott. This plant was one of the delightful surprises of the trip — completely covering the sandy bottom, in the shallow clear waters of White Lake. Paine's record (l. c. 65) is Albany, *Beck.* Sand Lake and Averell Lake, Rensselaer County, are the stations for my specimens from C. H. Peck and J. H. Wibbe. I can find no record of the plant ever having been found before in this State, west of the valley of the Hudson.

* MICROSTYLIS OPHIOGLOSSOIDES Nutt. *Achroanthes unifolia* (Mx.) Raf. The most abundant orchid in the White Lake region, growing in thin soil on rocks, in woods, marshes and sandy fields, nearly always in the shade of *Pteris.* I first collected this plant July 8, 1903, on sandy bluffs (alt. 550 ft.), four miles west of Utica. Mr. I. W. Street reports it common at Brantingham Lake, Lewis County. The plant has hitherto been overlooked in Central New York and is not included in Mr. Homer D. House's list of the orchids (Torreya, iii. 49). Specimens are in the State Herbarium from Chenango County (*Coville*), and north Herkimer County (*Goodrich*).

HABENARIA GRANDIFLORA (Bigel.) Torr. The beautiful Soldier's Plume is occasional along White Lake outlet. It abounds in several forms on the headwaters of the Black River, near North Lake (alt. 1827 ft.). Paine (l. c. 126) found it west of Old Fort Bull, Rome (alt. 415 ft.). It is omitted from the list quoted above.

* CORALLORHIZA MULTIFLORA FLAVIDA Peck. On a shady knoll near White Lake. The plants were very yellow and the lip unspotted.

*GOODYERA TESSELLATA Lodd. Frequent in cold mountainous woods at Long and Otter Lakes; wooded slopes of Bald Mountain, August, 1895.

*GOODYERA REPENS OPHIOIDES Fernald. Woods at Otter Lake. Mountain trail, Hardscrabble Lake (alt. 2050 ft.), Wilmurt; and in woods on Frankfort Hill (alt. 1400 ft.), Herkimer County. Near Oneida Lake (alt. 370 ft.), found there also by H. D. House (Torreya, iii. 165). Paine records several localities for *G. repens*. It grows in cold woods north of White Lake, on slopes of Bald Mountain, and ridges of ravines near Utica (alt. 900 ft.).

LYCOPODIUM INUNDATUM L. Abundant on the sandy and boggy margins of the Lakes, and in the beaver meadows. Opposite Utica in a sand bog (Fern Bull. ix. 88); east of the city in sandy fields. Bald Mt., and sand plains of Rome, also by Paine (l. c. 180–181), head of Oneida Lake, also by House (l. c. 166). The latter reports it at Ohio (Fern Bull. x. 16) (1370 ft.), and W. E. Wolcott at several stations near North Lake, all in Herkimer County. This record indicates a generous distribution especially in this region (Central Basin, see Fern Bull. xii. 97–105), famous for its large number of orchids and *Botrychia*. Utica is apparently the southern limit of the plant in Central New York. On the sandy shores of White Lake it was found well illustrating the fairy-ring like growth so interestingly described by Dr. B. L. Robinson, RHODORA, I. 28.

*LYCOPODIUM CLAVATUM MONOSTACHYON Grev. & Hook. Common on the shores of White Lake; mounds in a pasture near Taberg, Oneida Co., June 16, 1904. I first found this plant August 12, 1895, on the slopes of Bald Mountain (Fern Bull. xii. 104), where it was associated with *Carex leporina* L. (see Fernald, Proc. Am. Acad., xxxvii. 479, and RHODORA, iv. 229) and failed to realize the rarity of either plant. Prof. Peck has collected the former in Essex and Washington Counties.

*LYCOPODIUM CLAVATUM BREVISPICATUM Peck (54th Rep. N. Y. Mus. Nat. Hist. 162). On rocky slopes near White Lake, a form of club moss was found that resembles Professor Peck's plant from Wallface Mountain. "The leaves of the branches are closely imbricated and strongly incurved, and the spikes are short, thick and generally very blunt."

*BOTRYCHIUM MATRICARIAE Spreng. Fine specimens on a mossy

shaded bank at White Lake. Mr. B. D. Gilbert and the writer found a single plant on the Whitestown bluffs, in October, 1902, the station recorded for Microstylis, and it is of interest to note that Mr. Gilbert (Fern Bull. xii. 99) records this Botrychium from Lewis County.

(*To be continued.*)

CHLOROCHYTRIUM LEMNAE IN AMERICA.

Frank S. Collins.

Plants of the genus *Chlorochytrium* are of interest from their peculiar habitat and their special adaptations to the same. They are unicellular algae, and live in the tissues of higher, or at any rate larger organisms; not really as parasites, as they have well developed chromatophores and can assimilate their own nourishment; nor does it appear to be a case of symbiosis, as it is not easy to see what advantage their presence is to the host plants. Another point of interest is that *Chlorochytrium* is one of the relatively few genera represented both in salt and in fresh water; of the salt water forms three are known as American; *C. inclusum* Kjellm., in red algae at Greenland and from Alaska to Washington; the development of this species has been studied by Freeman[1]; *C. dermatocolax* Reinke, in *Chaetopteris* and *Sphacelaria* in Greenland; and *C. Schmitzii* Rosenv., in various loose tissued algae from Greenland to Maine. *C. Cohnii* Wright is found in *Enteromorpha* and some other algae, and in the gelatinous sheaths of such diatoms as *Schizonema*, along the New England coast; but this is now usually put in another genus, as *Chlorocystis Cohnii* (Wright) Reinhard. This species has been studied by Moore,[2] and the development well worked out.

Of the fresh water species the best known is *C. Lemnae* Cohn, which appears to be generally distributed in Europe, and whose development is quite well known. The host plant is *Lemna trisulca*

[1] E. M. Freeman, Observations on Chlorochytrium; Minn. Bot. Studies, Vol. II, p. 195. 1899.

[2] G. T. Moore, New or little known unicellular algae. I. Chlorocystis Cohnii; Bot. Gazette, Vol. XXX, p. 100, 1900.